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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
EWALD, MARIA VERONICA	
ART UNIT	**PAPER NUMBER**
1722	

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/616,824	MANNER, HANS-PETER	
	Examiner	Art Unit	
	Maria Veronica D. Ewald	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 – 3, 5 – 7, 9 – 10, 14 – 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Babin (U.S. 6,162,044). With respect to claim 1, Babin teaches an injection nozzle (item 12 – figure 2) for plastic comprising at least two outlet openings disposed substantially opposite one another relative to a center axis in an end region of the injection molding nozzle, directed towards different sides of the nozzle (figure 2; column 2, lines 63 – 65), for discharging to different sprue openings (item 144 – figure 2), each of the outlet openings including a needle closure with a closure needle adjustable in a direction of one of the outlet openings (item 114 – figure 2; column 3, lines 30 – 31) ; a common drive element for displacing the closure needles in a closing direction, the drive element being a displacement member movable between rear ends of the closure needles and the drive element including a cross section that is at least one of a cone, conical, tapered, a cam disk and an eccentric disk (column 3, lines 1 – 10) and a feed channel for transporting plastic to the outlet openings (item 50 – figure 2).

With respect to claims 2 and 3, Babin further teaches that the feed channel (item 50 – figure 2) comprises a separate feed channel (item 118 – figure 2) for the plastic for each of the lateral outlet openings provided with a closure needle and the feed channels are arranged outside a middle area of the injection molding nozzle (column 3, lines 40 – 42). The reference further teaches that the feed channels for the plastic entering the outlet openings are before mouths thereof, near ends of the individual closure needles (items 114, and 118 – figure 2).

With respect to claims 5 – 7, Babin teaches that the closure needles of the outlet openings have a common drive for displacement into the closing position (column 2, lines 66 – 67; column 3, lines 1 – 9). In addition, the reference teaches that the closure needles in a closing direction, have a cross section enlargement or a shoulder located before the feed channel entry (column 3, lines 30 – 31) for the plastic as an action surface for injection molding pressure for opening the closure needle, and the drive acting in the closing direction can be disconnected and/or overcome during opening of the respective closure needle (column 3, lines 5 – 10). Furthermore, Babin teaches that the injection nozzle has compression springs or displacement means engaging mechanically on the closure needles and are provided for displacing the closure needles into the closing position and are located at ends remote from the outlet opening.

With respect to claims 9 – 10, Babin teaches that the injection nozzle is further comprised of a push/pull rod displaceable in an axial direction is located centrally within the injection molding nozzle or for rotating a cam disk or eccentric disk, a rotary rod is

provided centrally in the injection molding nozzle (item 62 – figure 1; column 3, lines 3 – 5). Furthermore, the reference teaches that the drive element engaging the closure needles is coupled and connected with the closure needles such that one movement serves for closing and an opposite movement serves for pulling back the closure needles into an opening position (column 3, lines 1 – 9).

With respect to claims 14 – 18, Babin teaches that a rod, arranged in a center of the nozzle housing (14) for a common drive of the closure needles is provided or coupled with a rotary or axial drive (column 2, lines 66 – 67; column 3, lines 1 – 9). The reference further teaches that the outlet openings and the closure needles displaceable therein are arranged in bushings inserted into a housing of the injection molding nozzle (item 100 – figure 2; column 3, lines 18 – 22). In addition, the nozzle is further comprised of at least one retaining cap removably threadably secured to an outside of the injection molding nozzle which retains at least one of the closure needles, the retaining cap including a mouth of the outlet opening (item 124 – figure 2; column 4, lines 4 – 10); and a bushing which receives the closure needles in the nozzle body (item 100 – figure 2; column 3, lines 18 – 20, 33 – 35) and at least one of the closure needles includes a shoulder or a cross section enlargement which limits movement of the at least one of the closure needles in an axial direction (column 3, lines 44 – 45, 53 – 57), Furthermore, Babin teaches that injection molding nozzle has more than two outlet openings with closure needles displaceable therein (column 2, lines 63 – 65) which are arranged on one nozzle housing (column 2, lines 64 – 65) and are movable in the

closing direction with the same drive element (column 2, lines 66 – 67; column 3, lines 1 – 3).

With respect to claims 19 – 22, Babin teaches that the injection molding nozzle is comprised of first and second openings in an end region of the injection molding nozzle directed radially outward from a center axis of the nozzle and toward opposite sides of the nozzle for discharging to different sprue openings (item 144 – figure 2; column 2, lines 63 – 65); first and second closure needles (item 114 – figure 2); the first closure needle positioned in the first opening and the second closure needle positioned in the second opening (items 112, 114 – figure 2); a common drive element for displacing the first and second closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and slideably connected to an end of each of the first and second closure needles (column 3, lines 1 – 10); and a feed channel for transporting plastic to the outlet openings (item 50 – figure 2); and wherein a push/pull rod is connected to the displacement member for actuating the displacement member (item 62 – figure 1; column 3, lines 3 – 5); and wherein a rotary rod is connected to the displacement member for actuating the displacement member (item 62 – figure 1; column 3, lines 3 – 5); and furthermore, Babin teaches an injection molding nozzle with first and second openings (item 64 – figure 2) in an end region of the injection molding nozzle for discharging to different sprue openings disposed substantially opposite one another relative a center axis; first and second closure needles (items 112, 114 – figure 2), the first closure needle positioned in the first opening and the second closure needle positioned in the second opening; a

common drive element for displacing the first and second closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and slideably connected to each of the first and second closure needles (column 3, lines 1 – 10); and a feed channel for transporting plastic to the outlet openings (item 50 – figure 2).

Claims 1 – 7 and 9 – 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Guenther (EP 0447573 A1). Guenther teaches an injection nozzle (item 26 – figure 1) for plastic comprising at least two outlet openings disposed substantially opposite one another relative to a center axis (item 24 – figure 1; page 10) in an end region of the injection molding nozzle, directed towards different sides of the nozzle (item 24 – figure 1), for discharging to different sprue openings (item 46 – figure 1), each of the outlet openings including a needle closure with a closure needle adjustable in a direction of one of the outlet openings (item 50 – figure 3; page 11) ; a common drive element for displacing the closure needles in a closing direction, the drive element being a displacement member movable between rear ends of the closure needles and the drive element including a cross section that is at least one of a cone, conical, tapered, a cam disk and an eccentric disk (page 14) and a feed channel for transporting plastic to the outlet openings (item 22 – figure 1).

With respect to claims 2 – 3, Guenther further teaches that the feed channel comprises a separate feed channel for the plastic for each of the outlet openings provided with a closure needle and the feed channels are arranged outside a middle

area of the injection molding nozzle (item 24 – figure 1); wherein the feed channels for the plastic enter the outlet openings before mouths thereof, near ends of the individual closure needles (figure 1).

With respect to claims 4 – 5, Guenther teaches the outlet openings and the closure needles displaceable into them are arranged approximately radially and generally in one plane extending perpendicularly to a longitudinal mid-axis of the injection molding nozzle (figure 1); wherein the closure needles of the outlet openings have a common drive for displacement into the closing position (page 10 – 11).

With respect to claims 6 – 7, Guenther further teaches that the closure needles in a closing direction, have a cross section enlargement or a shoulder located before the feed channel entry for the plastic as an action surface for injection molding pressure for opening the closure needle, and the drive acting in the closing direction can be disconnected and/or overcome during opening of the respective closure needle (figure 3); wherein compression springs and/or displacement means engaging mechanically on the closure needles are provided for displacing the closure needles into the closing position and are located at ends remote from the outlet opening (figures 2 and 3; pages 10 and 14).

With respect to claims 9 – 15, Guenther teaches that the means for displacing a conically-shaped or cone displacement member, a push/pull rod displaceable in an axial direction is located centrally within the injection molding nozzle, or for rotating a cam disk or eccentric disk, a rotary rod is provided centrally in the injection molding nozzle (figures 1 and 3; page 10 – 11, 14); wherein a drive element engaging the closure

needles is coupled and connected with the closure needles such that one movement serves for closing and an opposite movement serves for pulling back the closure needles into an opening position (page 11); wherein there is a housing that is divided perpendicularly to the feed channels for the plastic and has a thermal compensation gap in the region of the division (item 34 – figure 1; page 9); wherein the thermal compensation gap on the housing of the injection molding nozzle is sealed by an overlap at least in a region of the feed channels for the plastic (item 34, 36 – figure 1; page 9); wherein the overlap for sealing the thermal compensation gap in the region of the feed channels is formed by a sliding sleeve or a respective sliding sleeve arranged on an inside or outside of the feed channel (page 9); wherein a rod in a center of the nozzle housing for a common drive of the closure needles is provided or coupled with a rotary or axial drive (page 14); wherein the outlet openings and the closure needles displaceable therein are arranged in bushings inserted into a housing of the injection molding nozzle (item 38 – figure 1; page 10).

With respect to claims 16 – 18, the reference also teaches that there is at least one retaining cap removably threadably secured to an outside of the injection molding nozzle which retains at least one of the closure needles, the retaining cap including a mouth of the outlet opening (item 30 – figure 1; page 10); wherein there is a bushing which receives the closure needles in the nozzle body, and at least one of the closure needles includes a shoulder or a cross section enlargement which limits movement of the at least one of the closure needles in an axial direction (item 30 – figure 1; figure 3; page 10); wherein more than two outlet openings with closure needles displaceable

therein are arranged on one nozzle housing and are movable in the closing direction with the same drive element (figure 2; page 12).

With respect to claims 19 – 22, Guenther teaches an injection nozzle for plastic comprising first and second openings in an end region of the injection molding nozzle directed radially outwardly from a center axis of the nozzle and toward opposite sides of the nozzle for discharging to different sprue openings (item 46 – figure 1); first and second closure needles; the first closure needle positioned in the first opening and the second closure needle positioned in the second opening (item 50 – figures 1 and 3), a common drive element for displacing the first and second closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and slideably connected to an end of each of the first and second closure needles (item 50 – figure 1; pages 9 – 10); and a feed channel for transporting plastic to the outlet openings (item 22 – figure 1); wherein there is a push/pull rod connected to the displacement member for actuating the displacement member (pages 9 – 10, 14) and wherein there is a rotary rod connected to the displacement member for actuating the displacement member (pages 9 – 10, 14).

Furthermore, with respect to claim 22, Guenther teaches an injection molding nozzle with first and second openings in an end region of the injection molding nozzle for discharging to different sprue openings disposed substantially opposite one another relative a center axis (figure 1); first and second closure needles (item 50 – figures 1 and 3; pages 9 – 10), the first closure needle positioned in the first opening and the second closure needle positioned in the second opening (pages 9 – 10); a common

drive element for displacing the first and second closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and slideably connected to each of the first and second closure needles (item 50 – figures 1 and 3; pages 9 – 10, 14); and a feed channel for transporting plastic to the outlet openings (item 22 – figure 1).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Babin in view of Halbach (U.S. 2,471,683). Babin teaches the characteristics previously described but does not teach that the outlet openings are arranged radially.

In an injection molding apparatus with improved multiple nozzles, Halbach teaches that there is a die plate with a plurality of suitably-spaced nozzle-receiving apertures (column 2, lines 41 – 42). There is a single source or central injection passage for supplying molten material under pressure and has pivotally connected or swiveled to it, a head, having laterally extending branches and provided with integral nozzles and extending at right angles thereto through the apertures (column 3, lines 5 – 10). This reads on the Applicant's claim that the outlet openings are arranged approximately radially and generally in one plane extending perpendicularly to a

longitudinal mid-axis of the injection molding nozzle. Halbach further teaches that the branched configuration has the advantages of enabling the mold to be filled more quickly, completely and uniformly, thus, producing a product with greater uniformity (column 1, lines 14 – 18). In addition, the reference teaches that the branched configuration minimizes heat loss and maintains fluidity of the molten material (column 2, lines 24, 33 – 35).

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the injection molding apparatus of Babin with the branched passageways of Halbach for the purpose of filling the mold quickly while at the same time maintaining the fluidity of the molten material and producing a more uniform product.

Claims 11 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babin in view of Anderson (U.S. 4,662,837). Babin teaches the characteristics previously described but does not teach that the injection nozzle have a thermal gap.

In an injection molding apparatus, Anderson teaches a die assembly with an injection nozzle for delivering molten resin through the die cavity (column 2, lines 36 – 39). Molten plastic material travels through an injection conduit (item 11 – figure 1) and branches at right angles into a main manifold channel (item 13 – figure 1) and then to injection nozzles (item 16 – figure 1; column 3, lines 51 – 53). Anderson further teaches that there is a gap (item 43 – figure 5) into which thermal expansion of the nozzle can occur (column 4, lines 48 – 49). This expansion gap exists between the second component and the nozzle (column 5, lines 18 – 19). This reads on the Applicant's claim

that the injection molding nozzle be further comprised of a thermal compensation gap in the region of the housing division and is sealed by an overlap at least in a region of the feed channels. The reference also teaches that the overlap is formed by sliding sleeves or a respective sliding sleeve arranged on an inside or outside of the feed channel (item 40 – figure 5; column 5, lines 37 – 42).

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the injection molding apparatus of Babin with the expansion gap of Anderson for the purpose of providing space for the nozzle to expand which occurs as the assembly reaches the operating temperature (column 5, lines 28 – 29).

Response to Arguments

15. Applicant's arguments filed August 16, 2006 have been fully considered but they are not persuasive. With respect to the reference of Babin, Applicant has argued and amended claims 1, 19 and 22 stating that the nozzle openings are disposed substantially opposite one another relative a center axis (in the end region of the injection molding nozzle). However, Examiner maintains the rejection and disagrees with Applicant. Though the openings *may not lie 180° apart from each other*, relative the center axis; they are *"substantially" opposite one another*. It is still unclear and indefinite as to how the term "substantially opposite" quantifiably overcomes the configuration of Babin. Furthermore, the openings of Babin are directed radially outwardly from a center axis of the nozzle.

In addition, Examiner disagrees with Applicant's arguments with respect to the reference of Guenther. Applicant has argued that the plastic does not flow through the side channels of the nozzle and flows through the bottom and upwards to the sprue opening to the gate. Examiner agrees that the plastic does flow as such; however, *Guenther also states (bottom of page 10, top of page 11 of the translation) that "it is also possible and provided by the invention that in the extension piece 27 of the nozzle element 26, side channels branch off of the main channel 22...In such cases the material to be processed flows in the injection molding process* ***at least also through the side channels 24 into the inlet cone 44 and thereby into the molding cavity."***

In addition, Guenther states that the side and main channels can have a stopper needle (item 50 – figure 3; page 14). Thus, the apparatus inherently would have a common drive element to move the stopper needles in both the side and main channels. In addition, typical drive elements are comprised of a push/pull rod connected to a piston that retracts and engages the stopper needles. Therefore, Examiner has maintained the rejection with respect to Guenther.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joseph S Del Sole

JOSEPH S. DEL SOLE
PRIMARY EXAMINER
10/24/06

MVE